

What is claimed is:

1 1. A method for correcting frequency offset of a local
2 oscillator in a direct sequence spread spectrum receiver wherein
3 received signals include a plurality of sequential slots of data,
4 at least one of which includes synchronization data, said method
5 comprising the steps of:
6 performing a first correlation between said received data
7 and a locally stored synchronization code;
8 adjusting the phase of said received data by a predetermined
9 phase step;
10 performing a second correlation between said phase adjusted
11 data and said stored synchronization code;
12 determining which of said first and second correlations
13 gives the largest correlation peak;
14 storing a signal corresponding to said largest correlation
15 peak;
16 estimating the phase offset to be applied to said local
17 oscillator from said signal; and
18 applying said estimated offset to said local oscillator.

1 2. The method according to claim 1 further comprising
2 the step of repeatedly adjusting the phase of said received data
3 by the same predetermined phase step after storage of said signal
4 corresponding to said largest correlation peak a predetermined
5 number of times before applying said offset to said local
6 oscillator.

1 3. The method according to claim 2 further comprising

2 the step of repeating said adjusting step in the event that each
3 adjustment of the phase results in an improvement in said largest
4 correlation peak.

4. An apparatus for correcting frequency offset of a local oscillator in a direct sequence spread spectrum receiver wherein received signals include a plurality of sequential slots of data, at least one of which includes synchronization data, said apparatus comprising:

6 means for performing a first correlation between said
7 received data and a locally stored synchronization code;

8 means for adjusting the phase of said received data by a
9 predetermined phase step;

10 means for performing a second correlation between said
11 phase adjusted data and said stored synchronization code;

12 means for determining the largest correlation peak in each
13 of said first and second correlations;

14 means for storing a signal corresponding to said largest
15 correlation peak;

16 means for estimating the phase offset to be applied to said
17 local oscillator from said signal; and

18 means for applying said estimated offset to said local
19 oscillator.

1 5.' The apparatus according to claim 4 further comprising
2 means for repeatedly adjusting the phase of said received data
3 by the same predetermined phase step after storage of said signal
4 corresponding to said largest correlation peak a predetermined
5 number of times before applying said offset to said local

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6 oscillator.

1 6. The apparatus according to claim 5 further comprising
2 means for causing said means for repeatedly adjusting the phase
3 of said received data to repeat all its repetitions in the event
4 that each adjustment of the phase results in an improvement in
5 said largest correlation peak.

1 7. The apparatus according to claim 6 wherein said
2 direct sequence spread spectrum receiver includes at least a
3 telephone and a mobile telephone.

1 8. A storage medium storing a control program to cause
2 a computer to carry out a method for correcting frequency offset
3 of a local oscillator in a direct sequence spread spectrum
4 receiver wherein received signals include a plurality of
5 sequential slots of data, at least one of which includes
6 synchronization data, said method comprising the steps of:

7 performing a first correlation between said received data
8 and a locally stored synchronization code;

9 adjusting the phase of said received data by a predetermined
10 phase step;

11 performing a second correlation between said phase adjusted
12 data and said stored synchronization code;

13 determining which of said first and second correlations
14 gives the largest correlation peak;

15 storing a signal corresponding to said largest correlation
16 peak;

17 estimating the phase offset to be applied to said local

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18 oscillator from said signal; and

19 applying said estimated offset to said local oscillator.

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